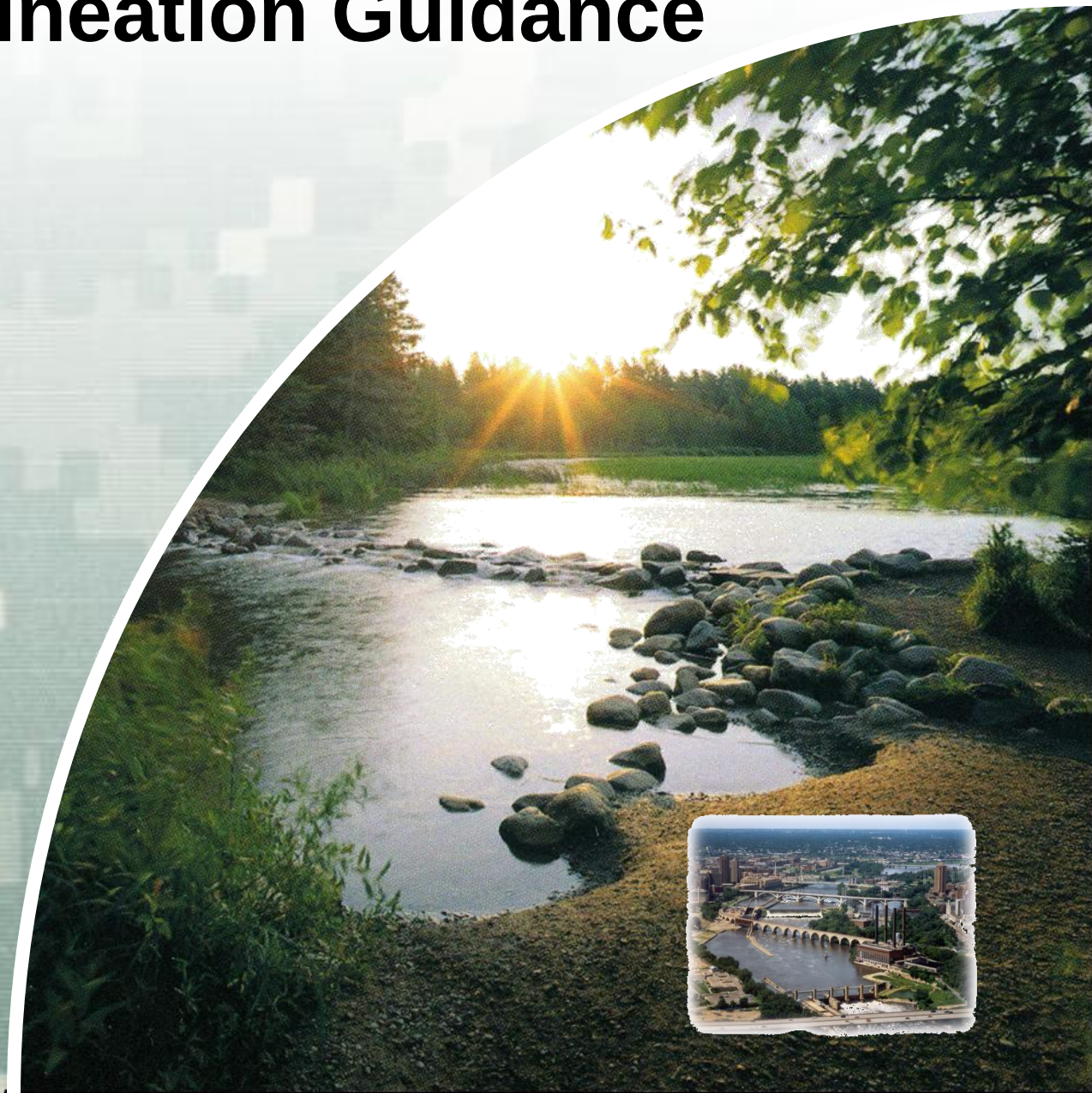
Updated Delineation Guidance

Barbara Walther

Senior Ecologist, St. Paul District

March 12, 2014

UW-Lacrosse: Critical Methods



US Army Corps of Engineers

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DoD Joint Ethics Regulation, ¶ 2-207

Presentation Outline

Intro/Background

1. Updates since 1996 Guidance

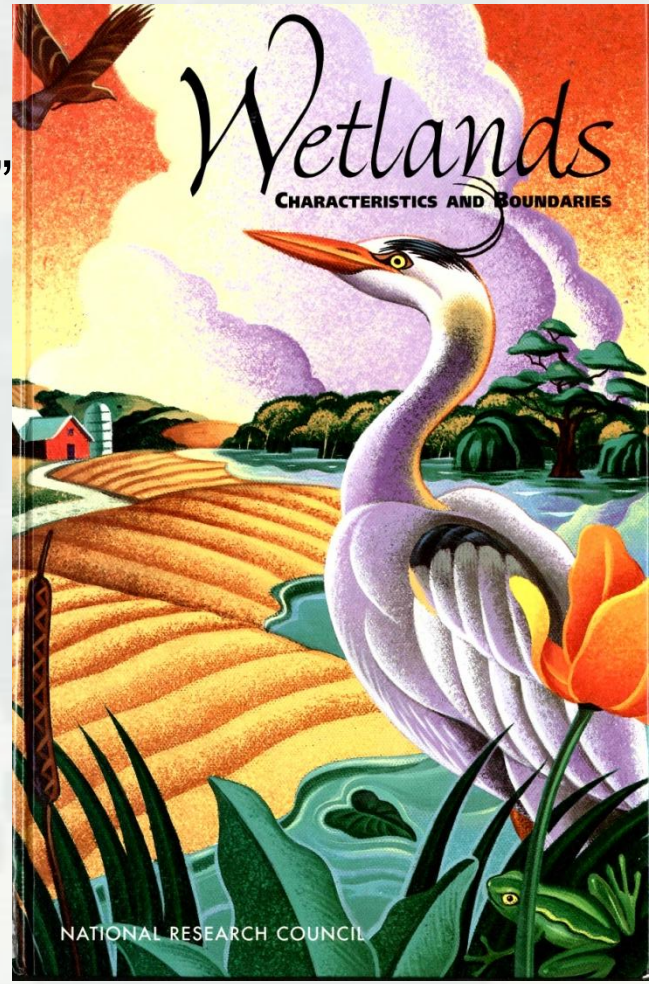
2. Delineation Report Content

3. Delineation Methods and Data Collection

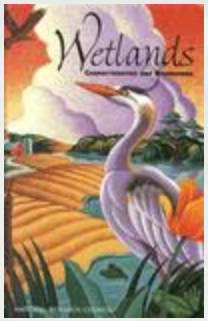
National Academy of Sciences 1995 Report

National Research Council (NRC):

"Wetlands: Characteristics and Boundaries"



"Rigorous programs for quality control and quality assurance should be used by all agencies that conduct wetland delineations."



Hydrology Technical Standard

"Pending the development of more sophisticated approaches and of regional guidelines, and in the absence of evidence to the contrary

the duration threshold for saturation can be taken as 14 days over the growing season in most years (on average, at a frequency greater than one out of two years)."

-NRC, 1995

1. Updates Since 1996 Guidance

- Hydric Soil Field Indicators
- Regional Supplements
- NWPL
- Court cases, institutional knowledge and expectations

United States Department of Agriculture

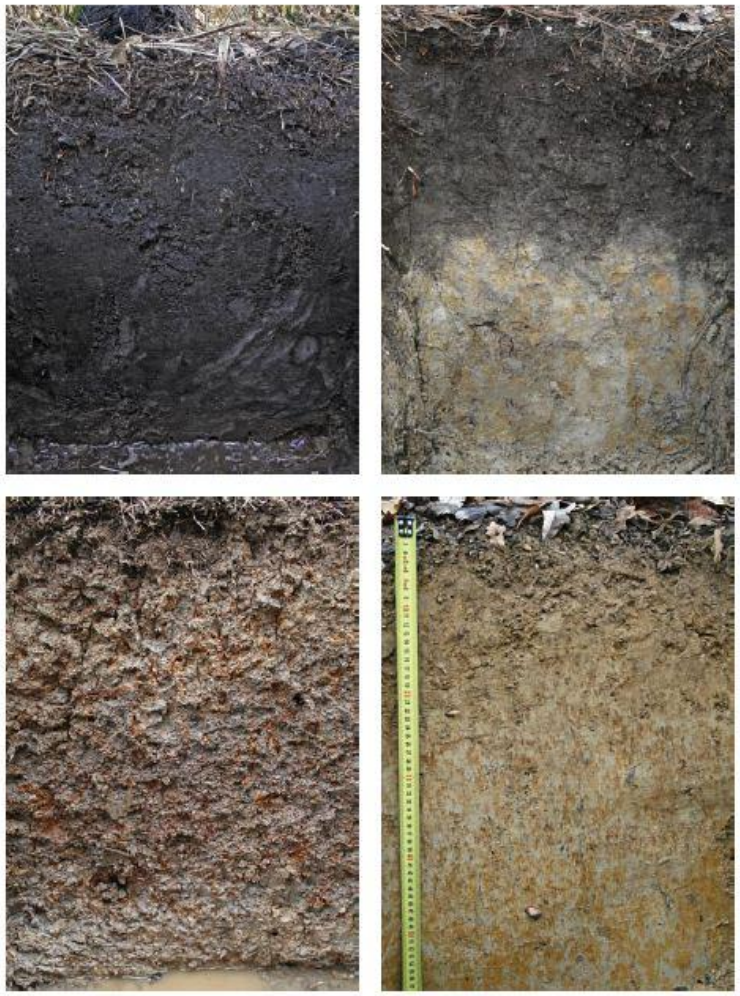
In cooperation with the National Technical Committee for Hydric Soils

NRCS

Natural Resources Conservation Service

Field Indicators of Hydric Soils in the United States

A Guide for Identifying and Delineating Hydric Soils, Version 7.0, 2010



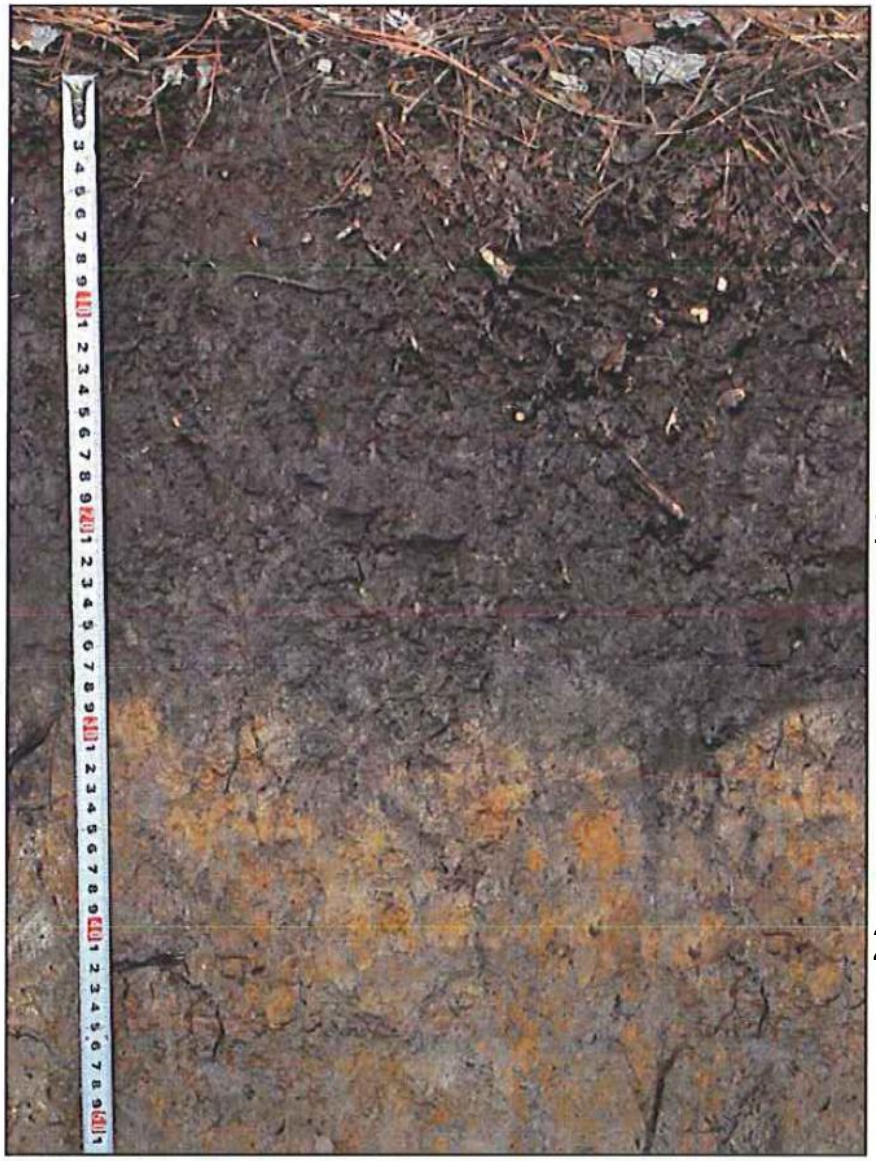


Figure 11. In this soil, a depleted matrix starts immediately below the black surface layer at approximately 11 in. (28 cm).

Field Indicators
A11 and A12 have a dark surface over the layer that has a depleted/gleyed matrix

10YR 2/1 with 5% redox
(not depleted)

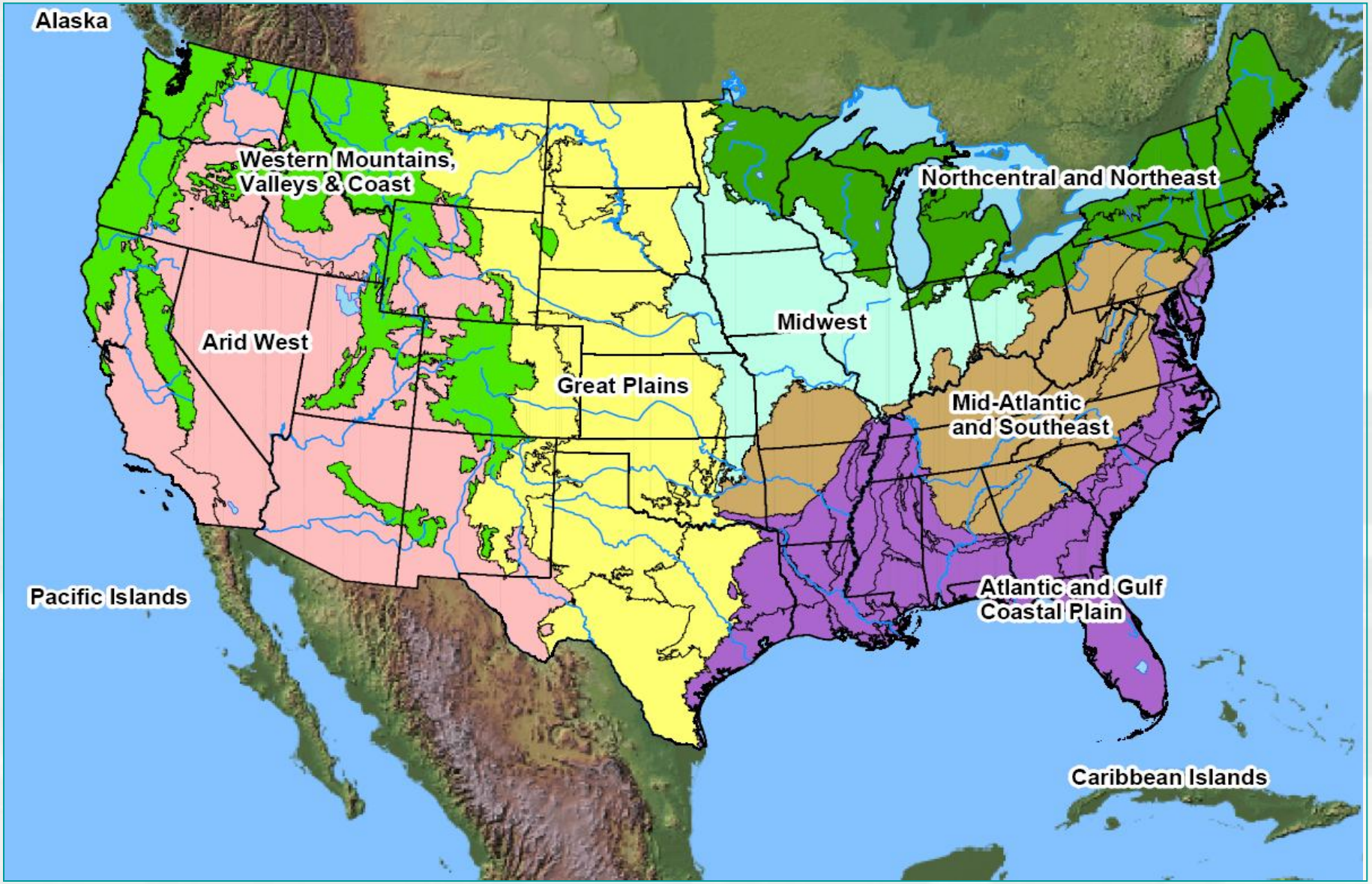
2.5Y 6/1 with 20% redox
(depleted)

Figure A1. Illustration of values and chromas that require 2 percent or more distinct or prominent redox concentrations and those that do not, for hue 10YR, to meet the definition of a depleted matrix. *Due to inaccurate color reproduction, do not use this page to determine soil colors in the field.* Background image from the Munsell Soil Color Charts reprinted courtesy of Munsell Color Services Lab, a part of X-Rite, Inc.

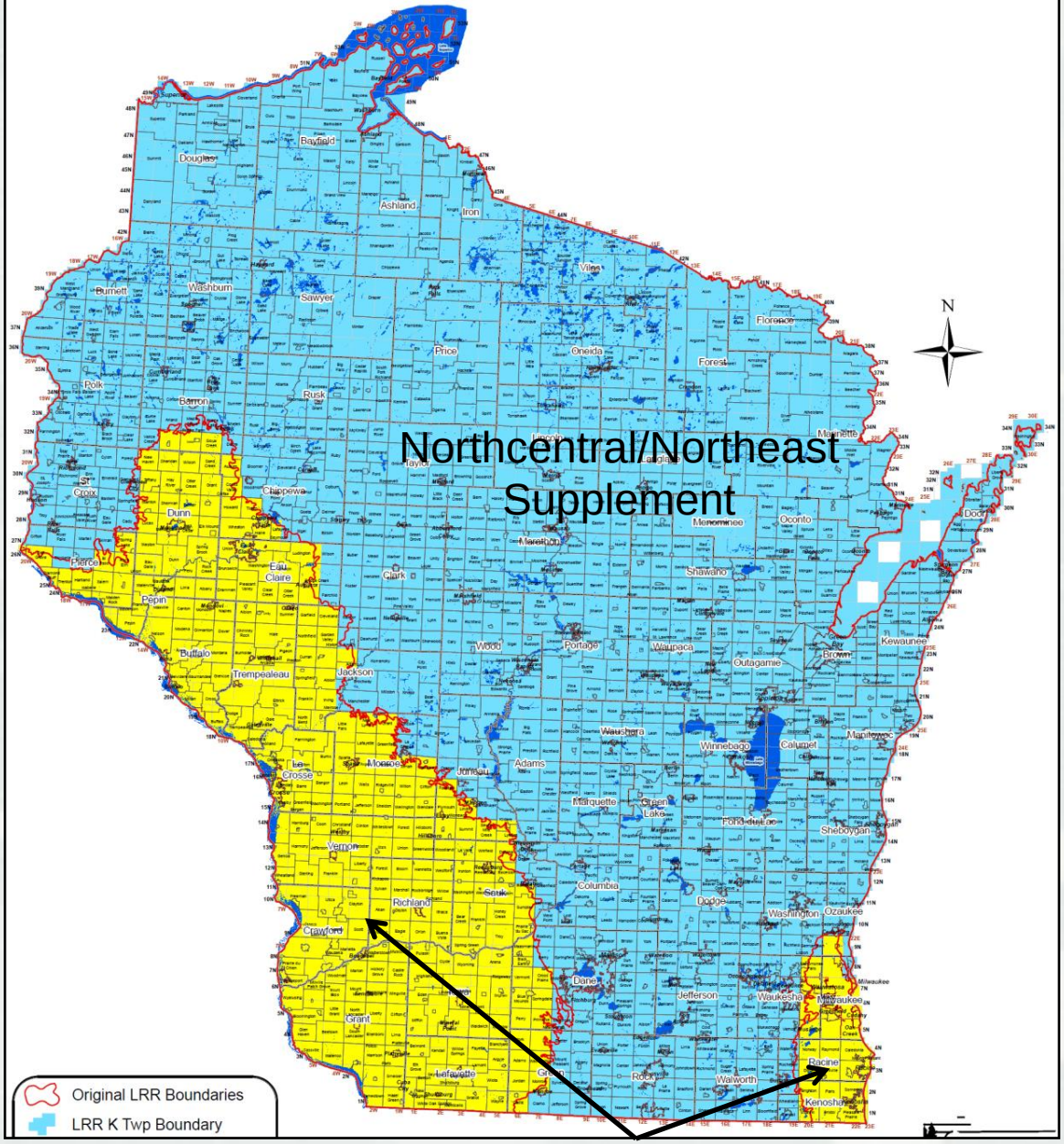
Figure A2. For hydric soil determinations, a gleyed matrix has the hues and chroma identified in this illustration with a value of 4 or more. *Due to inaccurate color reproduction, do not use*

Recent updates/errata:
F21 – Red Parent Material (Superior Lobe)

S11 - High chroma sands (Great Lakes shores)


Alaska
Western Mountains, Valleys & Coast
Northcentral and Northeast
Midwest
Arid West
Great Plains
Mid-Atlantic and Southeast
Pacific Islands
Atlantic and Gulf Coastal Plain
Caribbean Islands

Corps Manual Supplement Regions in Wisconsin



Midwest Supplement: Western Coulee and Ridges, Southwest Savanna and Southern Lake Michigan Coastal ecological landscapes.

http://wetland_plants.usace.army.mil

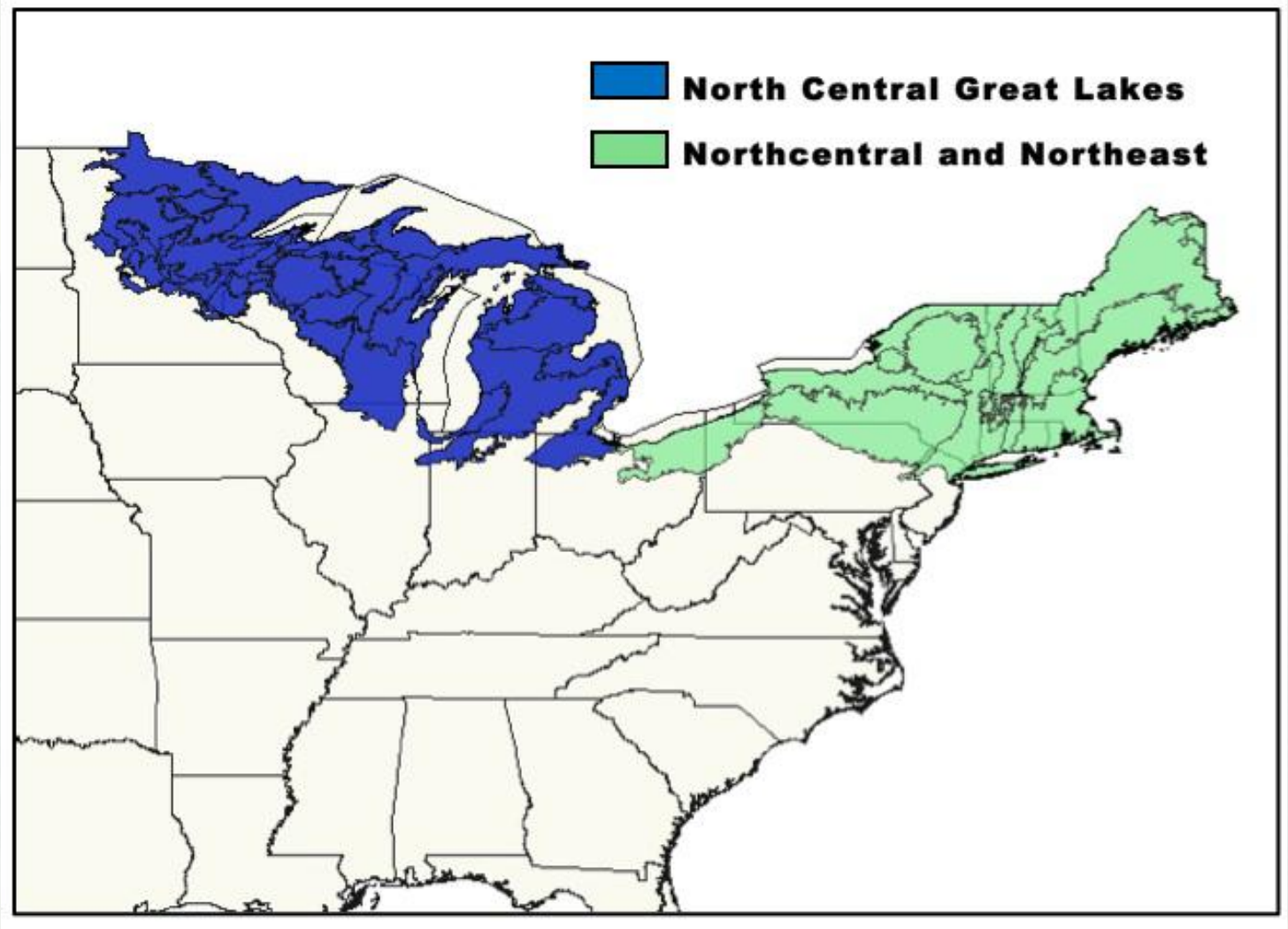
Plant List Updates

- Changes and regular updates to nomenclature
- Elimination of NO/NI and +/-

Table 1. Wetland indicator status ratings based on ecological descriptions

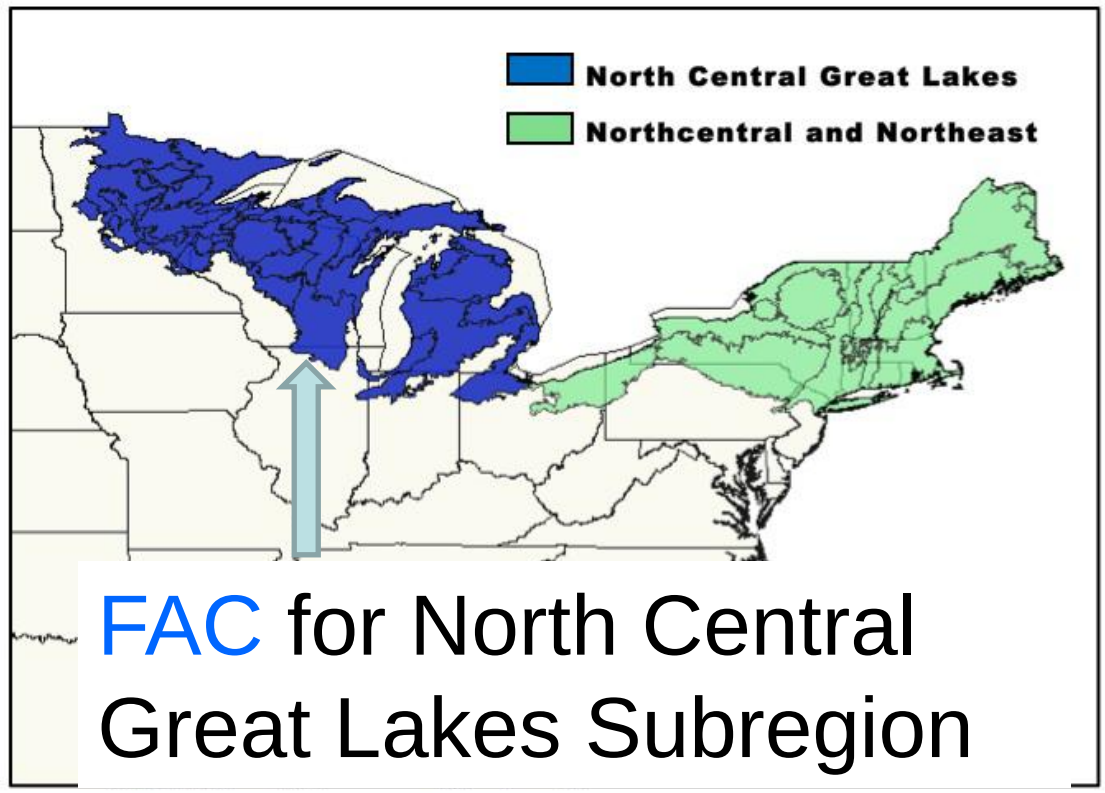
Wetland Indicator Status	Definition
Obligate Wetland (OBL)	Almost always occur in wetlands
Facultative Wetland (FACW)	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Occur in wetlands and non-wetlands
Facultative Upland (FACU)	Usually occur in non-wetlands, but may occur in wetlands
Obligate Upland (UPL)	Almost never occur in wetlands

Subregions for NC/NE



Quaking Aspen (*Populus tremuloides*)

FACU for Midwest



FAC for North Central Great Lakes Subregion

Growing Season

Regional Supplements
apply a
field observation-based approach
to
the start (and end)
of
growing season.

Why do we care about Growing Season?

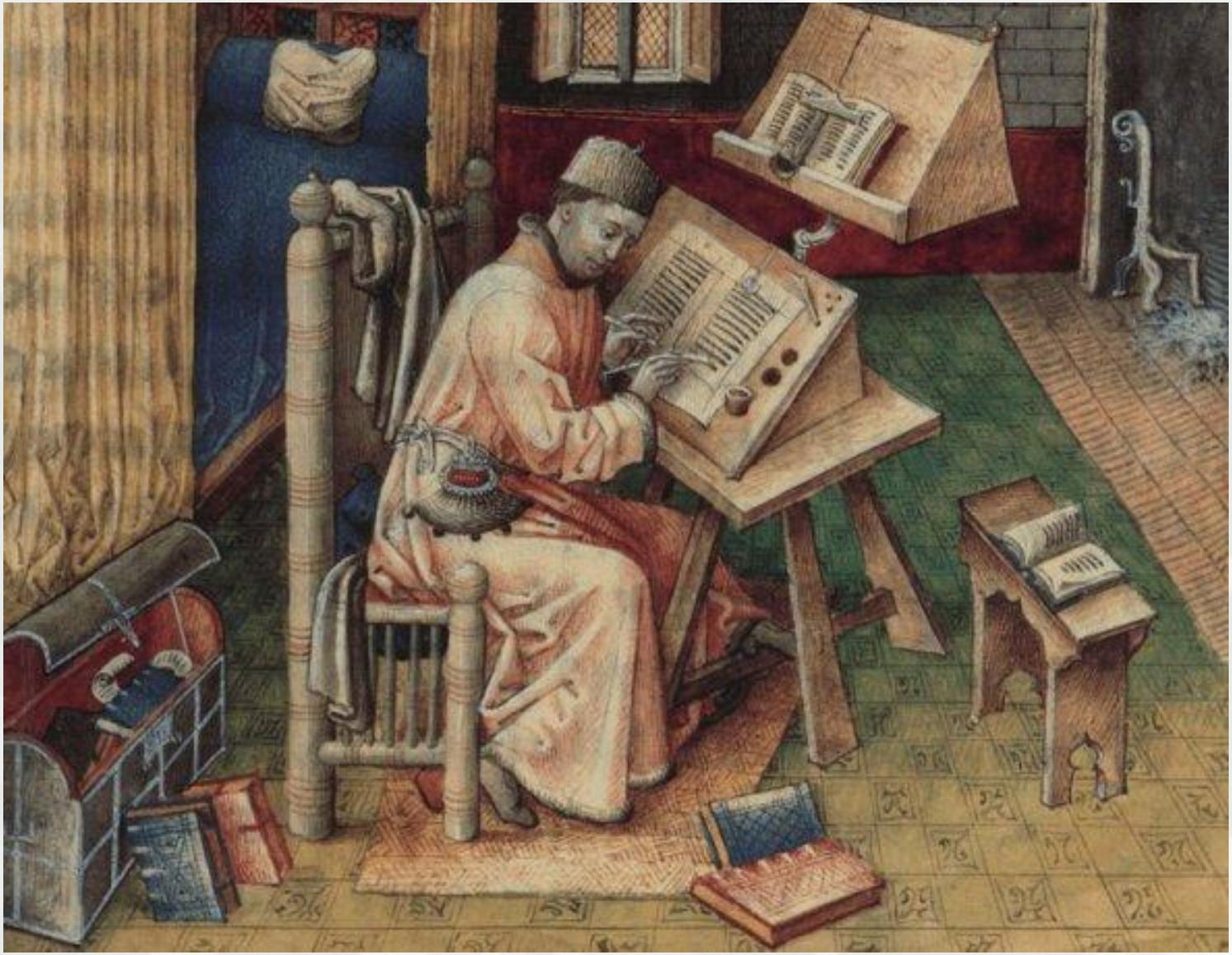
Growing season dates are needed to:

- Evaluate and interpret certain wetland hydrology indicators
- Analyze recorded data to determine if Technical Standard met

April 28, 2011


April 12, 2011

2: Report Content



Every baby knows the

scientific method

1 Make an observation.

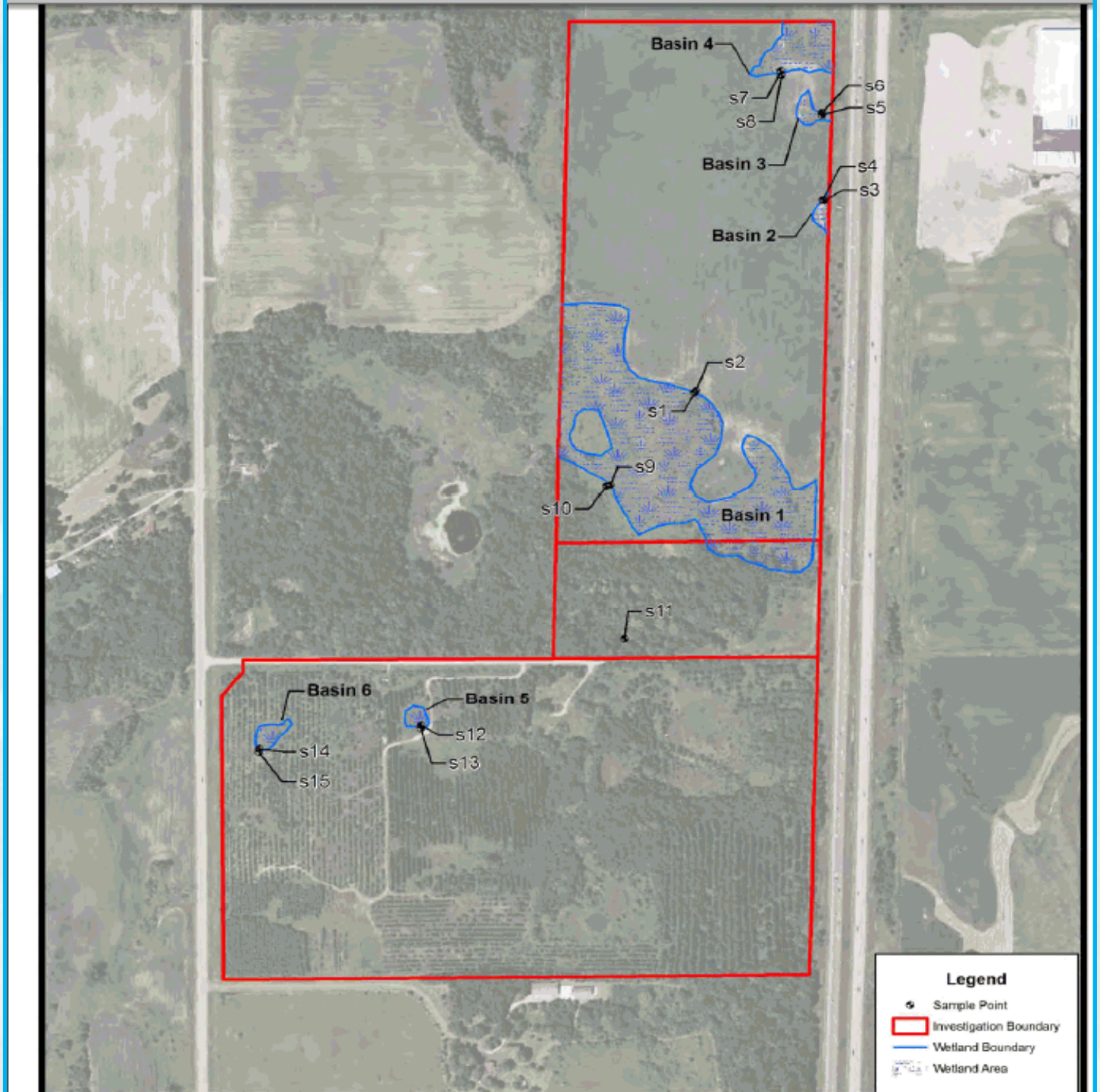
2 Form a hypothesis.

3 Perform the experiment.

4 Analyze the data.

5 Report your findings.

6 Invite others to reproduce the results.


Basin 4
s7
s8
s6
s5
Basin 3
s4
s3
Basin 2
s2
s1
s9
s10
Basin 1
s11
Basin 6
Basin 5
s12
s14
s13
s15
Legend
Sample Point
Investigation Boundary
Wetland Boundary
Wetland Area

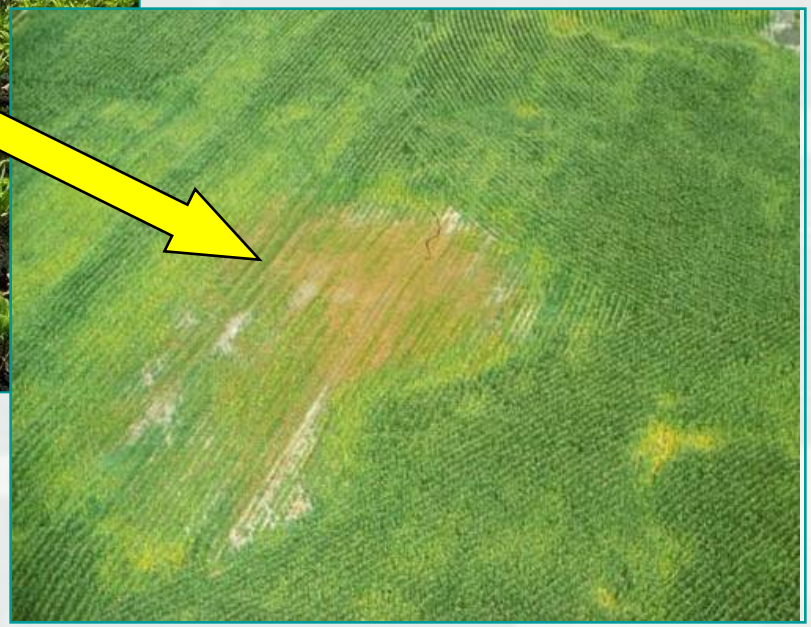
3: Delineation Methods and Data Collection

Off-site Methods

Wetland Determinations: Agricultural Lands

Crop stress, drown out, non-cropped due to wetness, etc.

Use state mapping conventions – no change to current practice



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Map Unit Legend

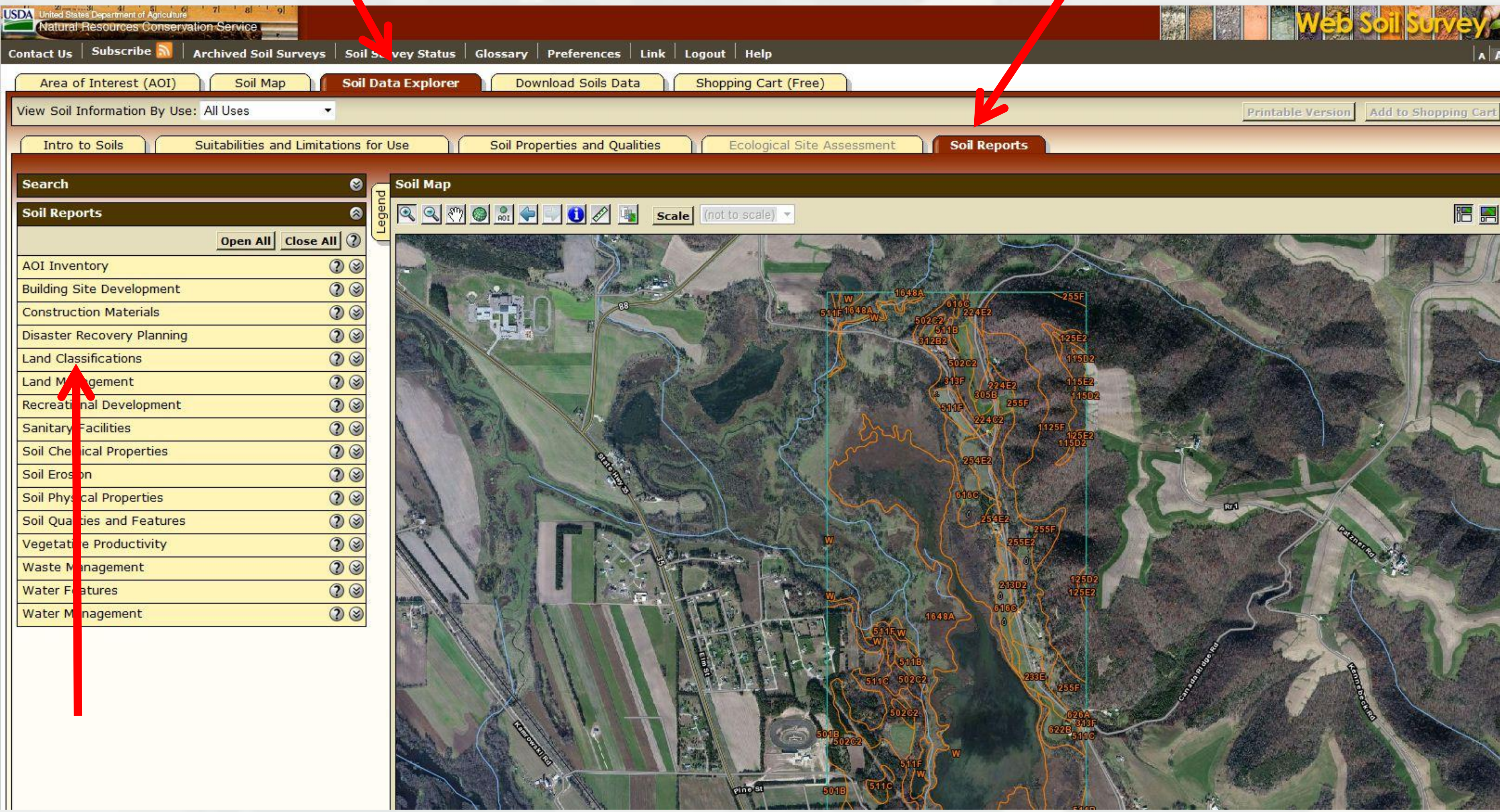
Buffalo County, Wisconsin (WI011)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
115D2	Seaton silt loam, 12 to 20 percent slopes, moderately eroded	1.9	0.2%
115E2	Seaton silt loam, 20 to 30 percent slopes, moderately eroded	8.0	0.9%
125D2	Pepin silt loam, 12 to 20 percent slopes, moderately eroded	0.2	0.0%
125E2	Pepin silt loam, 20 to 30 percent slopes, moderately eroded	4.8	0.6%
213D2	Hixton silt loam, 12 to 20 percent slopes, moderately eroded	5.7	0.7%
224C2	Elevasil sandy loam, 6 to 12 percent slopes, moderately eroded	2.6	0.3%
224E2	Elevasil sandy loam, 20 to 30 percent slopes, moderately eroded	7.3	0.9%
233E	Boone sand, 15 to 30 percent slopes	7.7	0.9%
254E2	Norden silt loam, 20 to 30 percent slopes, moderately eroded	10.5	1.2%
255E2	Urne fine sandy loam, 20	28.2	3.3%

Legend

Soil Map

Scale (not to scale)



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Soil Properties and Qualities
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Soil Reports
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Open All
Close All
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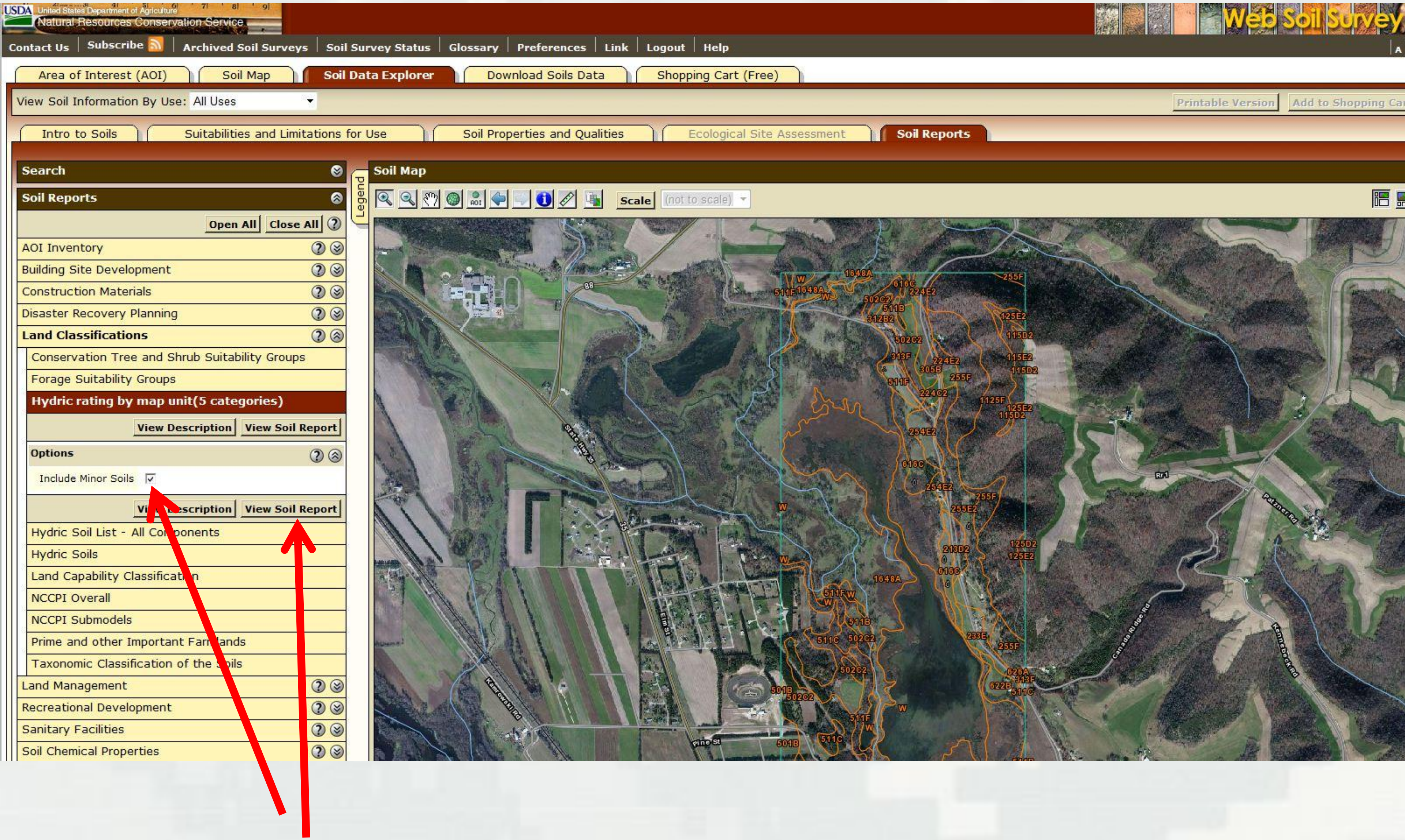
Building Site Development
Construction Materials
Disaster Recovery Planning
Land Classifications
Land Management
Recreational Development
Sanitary Facilities
Soil Chemical Properties
Soil Erosion
Soil Physical Properties
Soil Qualities and Features
Vegetative Productivity
Waste Management
Water Features
Water Management
Legend
Soil Map
Scale
(not to scale)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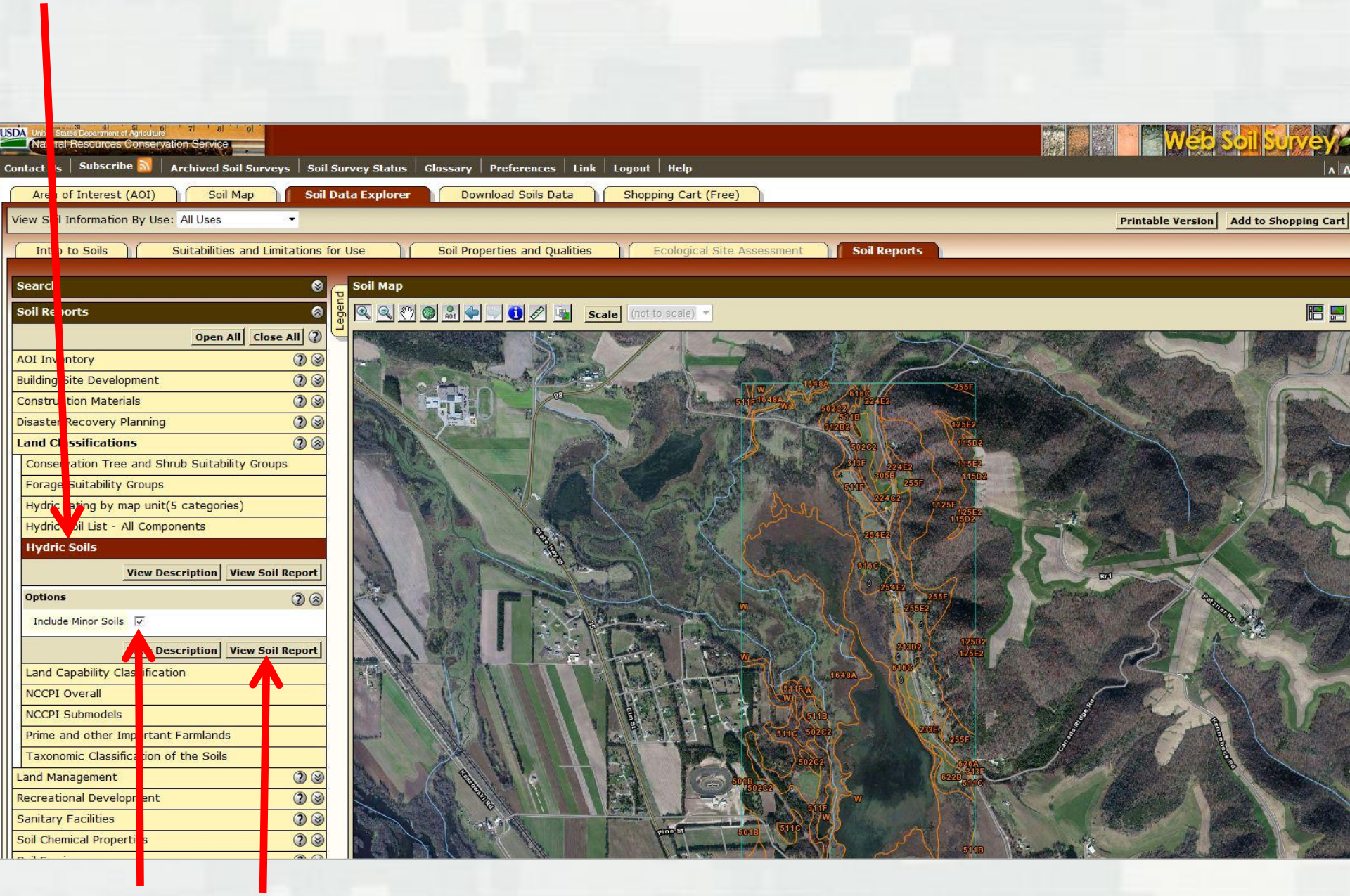
Construction Materials
Disaster Recovery Planning
Land Classifications
Conservation Tree and Shrub Suitability Groups
Forage Suitability Groups
Hydric rating by map unit(5 categories)
View Description
View Soil Report
Options
Include Minor Soils
View Soil Report
Hydric Soils
NCCPI Overall
NCCPI Submodels
Land Management
Recreational Development
Sanitary Facilities
Soil Chemical Properties
Legend
Soil Map
Scale
(not to scale)

Report — Hydric rating by map unit(5 categories)

This Hydric Soil Category rating indicates the cumulative percentage of component(s) that meet the criteria for hydric soils within the map units. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric or not hydric. The class ratings are: Hydric (100%), Predominantly hydric (66 to 99%), Partially hydric (33 to 65%), Predominantly nonhydric (1 to 32%), and Nonhydric (0%).

Buffalo County, Wisconsin

Mapunit symbol	Map symbol and map unit name	Hydric Percent of map unit	Hydric category
1125F	1125F—Dorerton, very stony-Elbaville complex, 30 to 60 percent slopes	0	Nonhydric
115D2	115D2—Seaton silt loam, 12 to 20 percent slopes, moderately eroded	0	Nonhydric
115E2	115E2—Seaton silt loam, 20 to 30 percent slopes, moderately eroded	0	Nonhydric
125D2	125D2—Pepin silt loam, 12 to 20 percent slopes, moderately eroded	0	Nonhydric
125E2	125E2—Pepin silt loam, 20 to 30 percent slopes, moderately eroded	0	Nonhydric
1648A	1648A—Northbend-Ettrick silt loams, 0 to 3 percent slopes, frequently flooded	96	Predominantly hydric
213D2	213D2—Hixton silt loam, 12 to 20 percent slopes, moderately eroded	0	Nonhydric
224C2	224C2—Elevasil sandy loam, 6 to 12 percent slopes, moderately eroded	0	Nonhydric
224E2	224E2—Elevasil sandy loam, 20 to 30 percent slopes, moderately eroded	0	Nonhydric
233E	233E—Boone sand, 15 to 30 percent slopes	0	Nonhydric
254E2	254E2—Norden silt loam, 20 to 30 percent slopes, moderately eroded	0	Nonhydric
255E2	255E2—Urne fine sandy loam, 20 to 30 percent slopes, moderately eroded	0	Nonhydric
255F	255F—Urne fine sandy loam, 30 to 45 percent slopes	0	Nonhydric
305B	305B—Richwood silt loam, 1 to 6 percent slopes	0	Nonhydric
312B2	312B2—Festina silt loam, 2 to 6 percent slopes, moderately eroded	0	Nonhydric
313F	313F—Plumcreek silt loam, 20 to 45 percent slopes	0	Nonhydric
413B	413B—Rasset sandy loam, 2 to 6 percent slopes	0	Nonhydric
501B	501B—Finchford loamy sand, 2 to 6 percent slopes	0	Nonhydric
502C2	502C2—Chelsea fine sand, 6 to 15 percent slopes, moderately eroded	0	Nonhydric
511B	511B—Plainfield sand, 2 to 6 percent slopes	0	Nonhydric
511C	511C—Plainfield sand, 6 to 15 percent slopes	0	Nonhydric
511F	511F—Plainfield sand, 15 to 60 percent slopes	0	Nonhydric
616C	616C—Chaseburg silt loam, 4 to 12 percent slopes, occasionally flooded	0	Nonhydric
622B	622B—Worthen silt loam, 2 to 6 percent slopes, occasionally flooded	0	Nonhydric
626A	626A—Arenzville silt loam, 0 to 3 percent slopes, occasionally flooded	2	Predominantly nonhydric
W	W—Water	0	Nonhydric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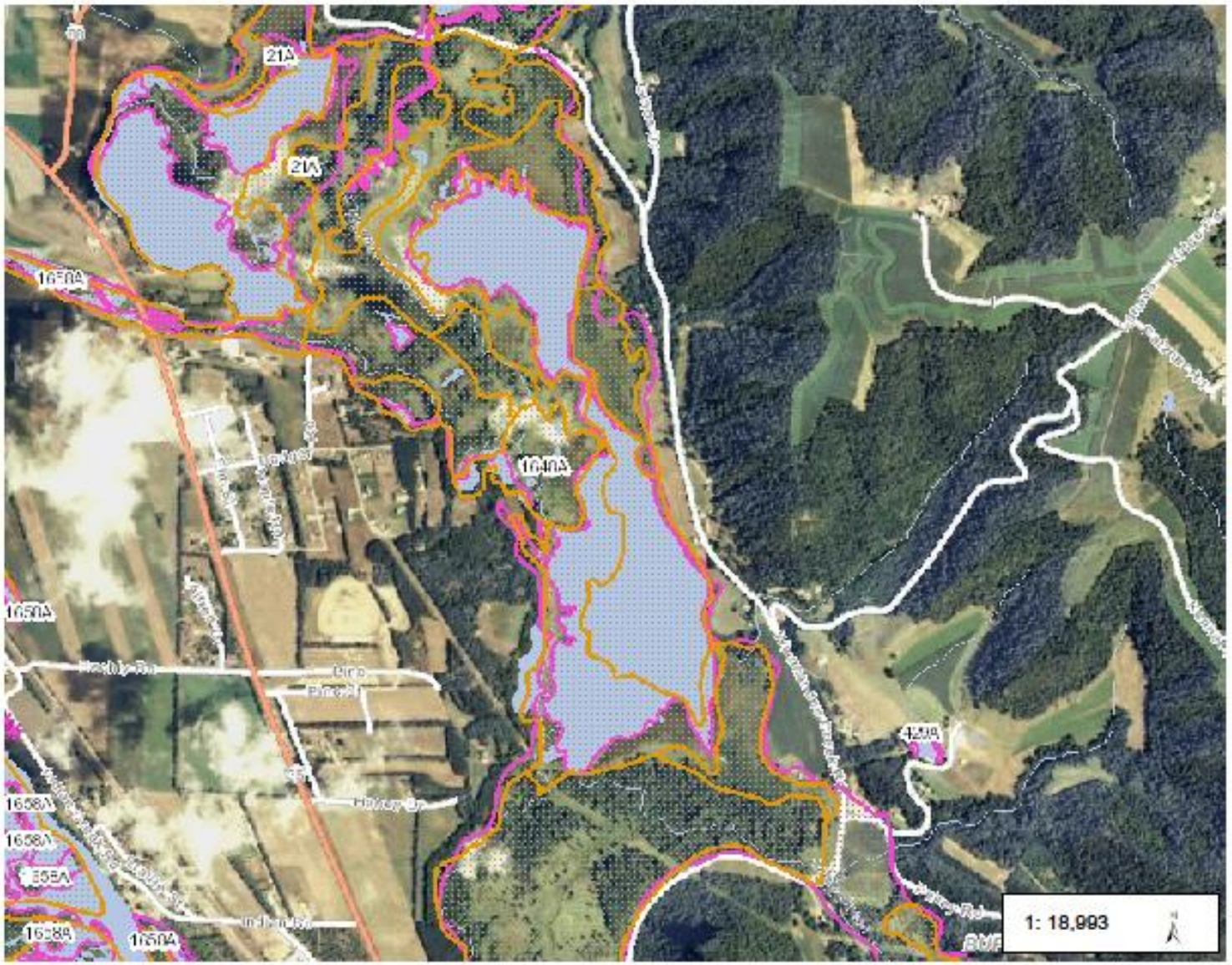
Construction Materials
Disaster Recovery Planning
Land Classifications
Conservation Tree and Shrub Suitability Groups
Forage Suitability Groups
Hydric Rating by map unit(5 categories)
Hydric Soil List - All Components
Hydric Soils
View Description | View Soil Report
Options
Include Minor Soils
View Description | View Soil Report
Land Capability Classification
NCCPI Overall
NCCPI Submodels
Prime and other Important Farmlands
Taxonomic Classification of the Soils
Land Management
Recreational Development
Sanitary Facilities
Soil Chemical Properties
Legend
Soil Map
Scale
(not to scale)

Report — Hydric Soils

Buffalo County, Wisconsin

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric criteria
626A—Arenzville silt loam, 0 to 3 percent slopes, occasionally flooded				
	Ettrick	2	Flood plains	2
1648A—Northbend-Ettrick silt loams, 0 to 3 percent slopes, frequently flooded				
	Northbend	60	Flats on flood plains	4
	Ettrick	30	Depressions on flood plains, overflow stream channels on flood plains	2, 3, 4
	Palms, frequently flooded	6	Backswamps on flood plains	1, 3, 4

Surface Water Data Viewer Map



Legend

- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- NRCS Wetspots
- Wetland Indicators
- Rivers and Streams
- Open Water
- Hillshades (10-meter DEM)
  - High : 255
  - Low : 0

Notes

0.6 0 0.30 0.6 Miles

NAD_1983_HARN_Wisconsin_TM

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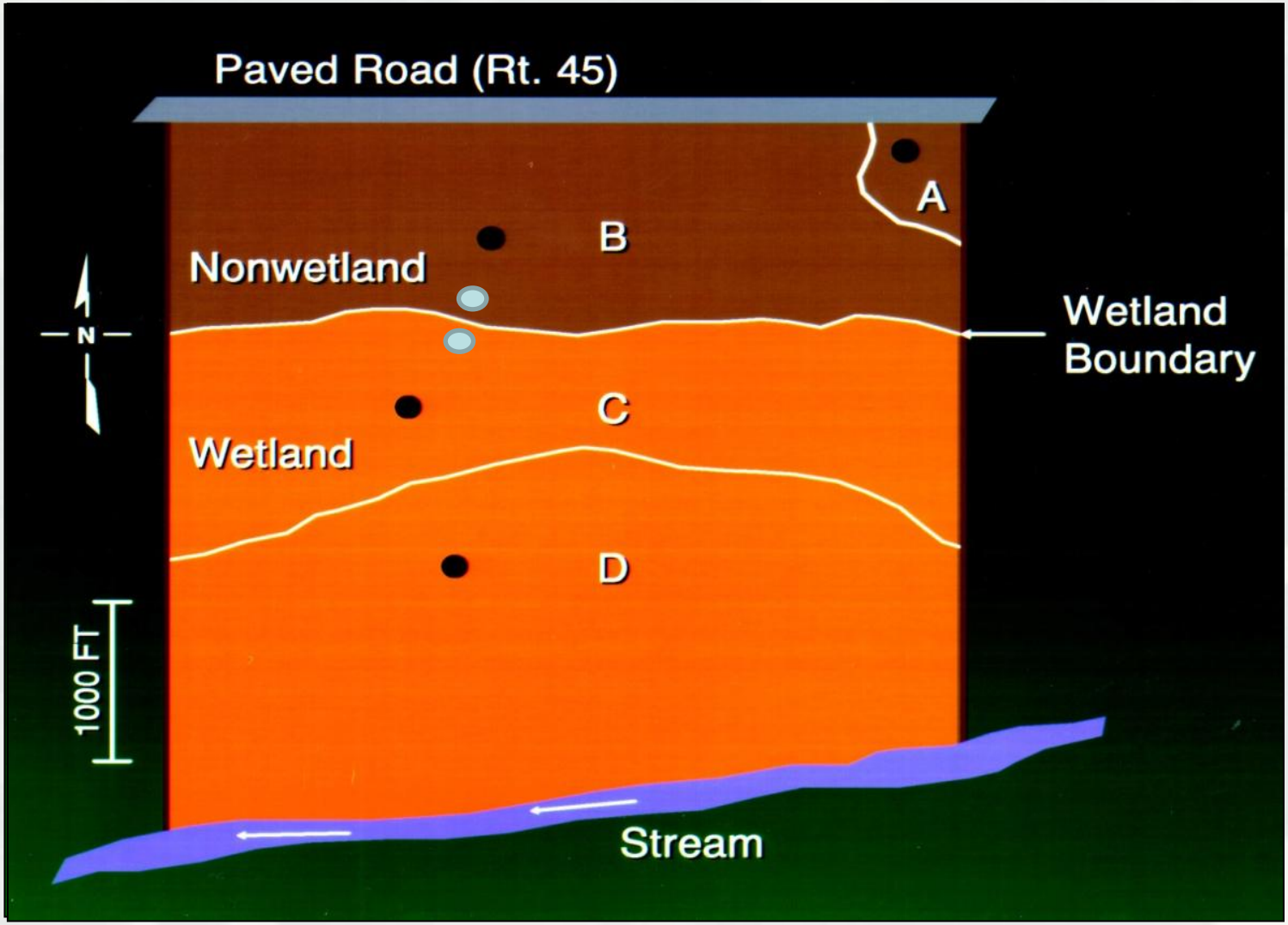
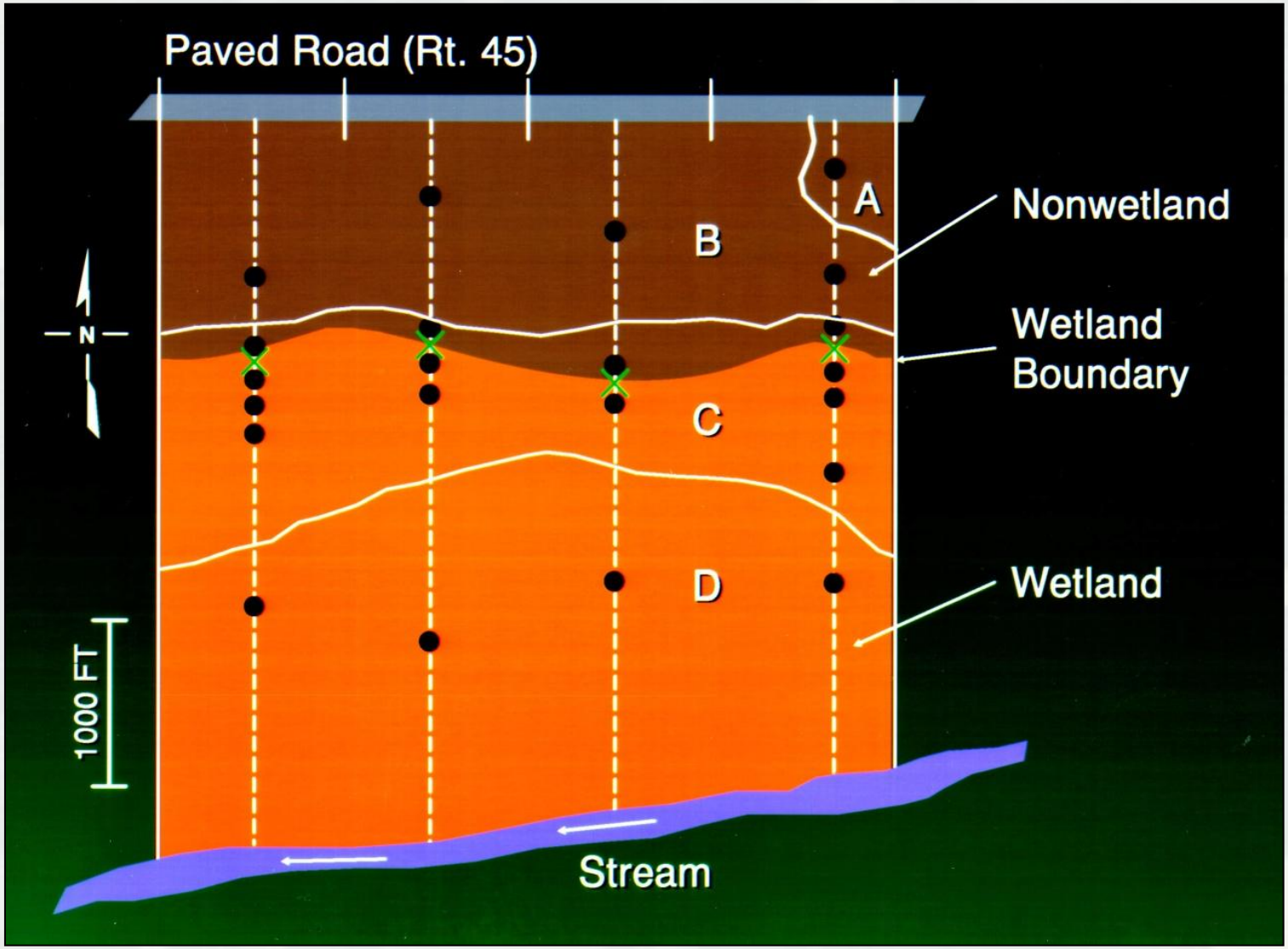
BBC

Choosing Sampling Points



Sampling a Complex Site



NEC vs. NC

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: | City/County: | Sampling Date:

Applicant/Owner: | State: | Sampling Point:

Investigator(s): | Section, Township, Range:

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI Classification:

Normal Environmental Conditions?

Are climatic/hydrologic conditions of the site typical for this time of the year? | (If no, explain in remarks.)

Are vegetation , soil , or hydrology significantly disturbed? | Are "normal circumstances" present?

Are vegetation , soil , or hydrology naturally problematic? | (If needed, explain any answers in remarks.)

Normal circumstances?

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N		
Hydric soil present?		Is the sampled area within a wetland?	N
Indicators of wetland hydrology present?		If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland Hydrology Indicators

C2 – Dry season water table

Category: Secondary

General Description: Visual observation of the water table between 12 and 24 in. (30 and 60 cm) below the surface during the normal dry season or during a drier-than-normal year.

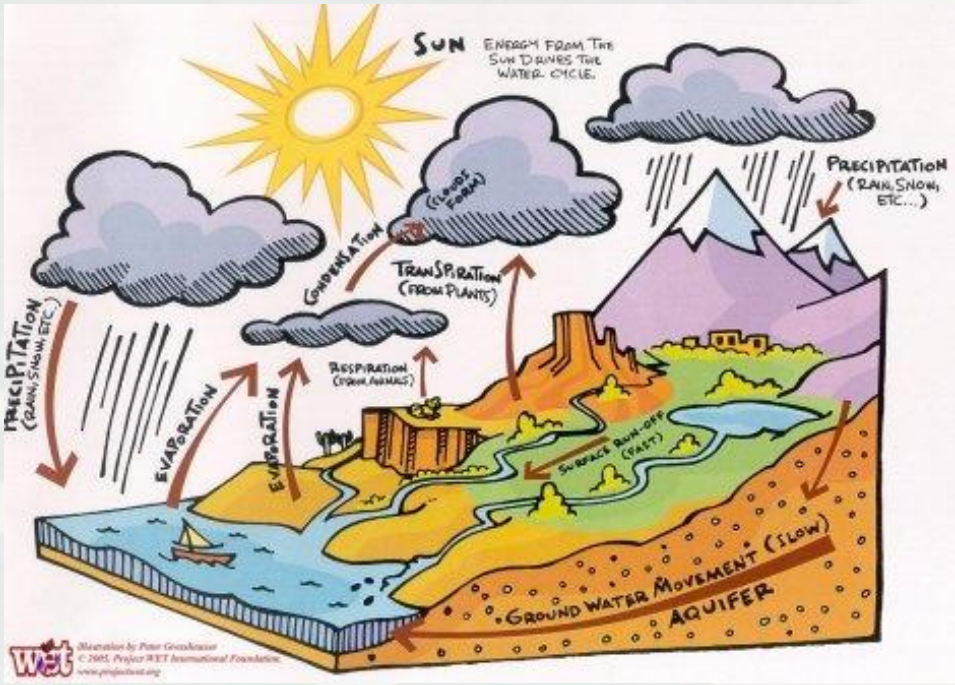
Dates for start of normal dry season:
Midwest – July 15th
NC/NE – August 1st

Identification of ALL Aquatic Resources

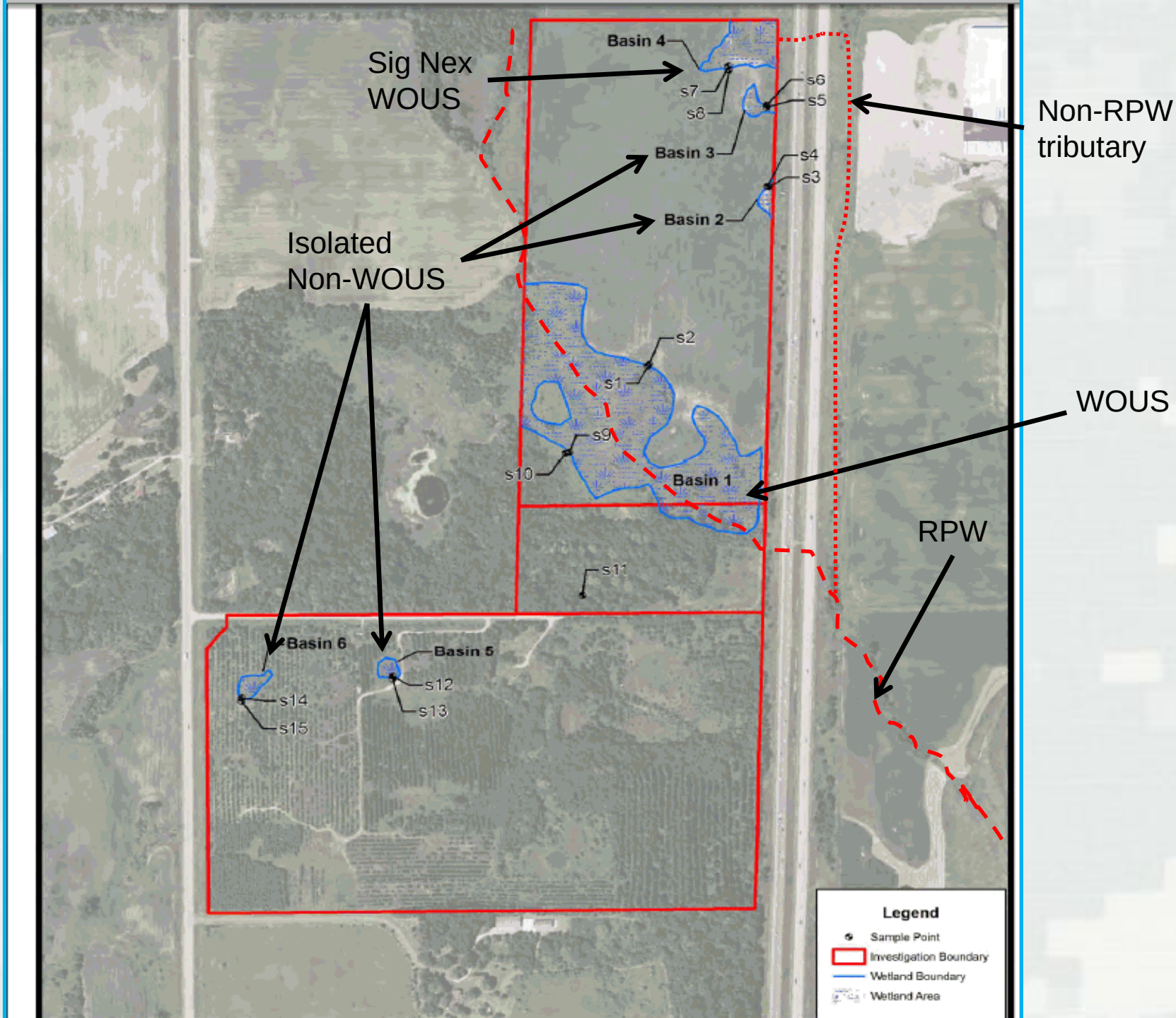
Hydrologic Landscapes

-Tom Winter, USGS

- Within similar landscapes, water moves as
  - Groundwater
  - Surface water
  - Atmospheric water
- affected by similar
  - Landform/topography
  - Soils/geology
  - Climate



Waters of the United States (WOUS)


Sig Nex WOUS
Non-RPW tributary
Isolated Non-WOUS
WOUS
RPW
Basin 4
Basin 3
Basin 2
Basin 1
Basin 6
Basin 5
s1
s2
s3
s4
s5
s6
s7
s8
s9
s10
s11
s12
s13
s14
s15
Legend
Sample Point
Investigation Boundary
Wetland Boundary
Wetland Area


Legend
Project Location
Non Hydric
Hydric
193rd St W
250, Kennebec
318, Mayer
Akin Rd
Elmwood Cir
195th St W
MSAS 102
BREAK LINE
W2-1
W2-2
W2-3
Wetland 2
Wetland 2
198th St
Ember Ave
Drover Dr

Other Tidbits in Guidance

- Non-concurrence for noncompliant reports
- Tips and general guidance
- Appendices (tables, references, etc.)
- Public Notice ~ prior to 2014 growing season

As long as the line is right, it doesn't really matter, right?

- Regulators work for the taxpayers
- We are all taxpayers
- Don't want time/money wasted in review of a poorly documented delineation

- Not about personalities and egos
- About application of the science
- Line could be 'right on' but if it is poorly documented, or rife with mistakes, it will take more time to verify and review

June 1969

http://www.mvp.usace.army.mil/Missions/Regulatory.aspx

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Wetland Plant Book

Wetland Plants & Plant Communities of Minnesota & Wisconsin (3rd Ed.)

This book was recently moved to the Corps of Engineers digital libary.

About Our Regulatory & Permits Office

The mission of the Corps of Engineers' Regulatory Program is to protect the nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the nation's waters, including wetlands.

The Corps' Regulatory Programs includes Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. The St. Paul District's regulatory jurisdiction covers the states of Minnesota and Wisconsin.

Under Section 10, a Corps permit is required to do any work in, over or under a 'Navigable Water of the U.S.' Waterbodies have been designated as 'Navigable Waters of the U.S.' based on their past, present or potential use for transportation for interstate commerce.

Under Section 404, a Corps permit is required for the discharge of dredged or fill material into waters of the U.S. Many waterbodies and wetlands in the nation are waters of the U.S. and are subject to the Corps' Section 404 regulatory authority.

Recent Public Notices

2013-04033-AMN

LETTER OF PERMISSION: The applicant proposes to discharge dredged and fill material into 2.52 acres of wetlands adjacent to unnamed tributaries to the Wolf River along 9.8 miles of STH 187 located between WIS 54 in

Contact Information

- District Headquarters
- Minnesota
- Wisconsin

Joint Permit Applications

Wisconsin
Wisconsin Department of Natural Resources

Minnesota
MN Joint Application Form (pdf)
MN Joint Application Form (doc)

For Section 10 Waters go to:
Application for Department of the Army Permit


RESOLUTIONS? ME?? JUST WHAT ARE YOU IMPLYING? THAT I NEED TO CHANGE?? WELL, BUDDY, AS FAR AS I'M CONCERNED, I'M PERFECT THE WAY I AM!

References

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